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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/678,461

10/03/2003

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F3319(C)

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201 7590 04/02/2009
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EXAMINER

STULII, VERA

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/678,461	Applicant(s) GIDLEY ET AL.	
	Examiner VERA STULII	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5,13,14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,13,14,16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Prosecution Application

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 8, 2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4-5, 13-14 and 16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for freezing rate, does not reasonably provide enablement for the rate of cooling. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. A number of factors must be considered in assessing the enablement of an invention including the following: the breadth of the claims, the quantity of experimentation needed to make or use the invention based on the content of the disclosure, the guidance provided in specification,

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of working examples provided, predictability and the state of the art. See *In re Wands*, 858 F.2d 731,737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Applicants have not provided sufficient guidance toward the nature of the rate of cooling/freezing. The stated limitation of the cooling rate of between 2 °C per hour and 320 °C per hour, does not serve to provide sufficient guidance for one skilled in the art to determine whether applicant refers to the cooling rate or freezing rate. Applicants have not provided guidelines concerning the proper protocol for selecting such rate. Nor have Applicants provided working examples as a guidance in this matter. Thus, absent these necessary teachings, it would require an undue amount of experimentation for one skilled in the art to attempt to produce recited product employing the recited rate of cooling.

Applicants disclose and claim the cooling rate of between 2 °C per hour and 320 °C per hour. Freezing rate is defined as a difference between the initial and the final temperature divided by the freezing time. The freezing rate is expressed in degrees Celsius per hour (see Francis page 1117). The cooling rate is defined as an instantaneous rate of change of the temperature. If an object is allowed to cool, the rate of cooling at any instant is proportional to the difference between the object's temperature and the ambient temperature. In other words, an object cools faster at first, while it is hot, and the rate of cooling slows down as the temperature of the object approaches the ambient temperature. The function that relates the object's temperature to time is a negative exponential function of the form:

$$T(t) = T_a + (T_0 - T_a)e^{-kt}$$

T_a is the ambient temperature

$(T_0 - T_a)$ is the difference between the object's temperature and the ambient temperature initially at time $t=0$;

K is a cooling rate constant which governs the rate of cooling;

T is a time of cooling;

It is not clear whether applicant meant an instantaneous rate of cooling (cooling rate) or freezing rate.

The only working example presented by Applicant as “examples 4 to 6” on page 7 of the specification discloses the following:

The fruits were cut into 1cm cubes and were frozen from +10 C to -30 C in a Montford freezer at a rate of 2.5 C per hour over 16 hours. During this process, mango was undercooled to -9.8C, kiwi was undercooled to -9.3C, and strawberries were undercooled to -7.4C. The samples were then stored in a freezer at -18 C and mechanical characteristics were measured.

It appears that applicant in fact discloses freezing rate (2.5°C per hour) which is defined as a difference between the initial (+10°C) and the final temperature (-30°C) divided by the freezing time (16 hours). It is further noted that claim 1 recites:

- i) cooling fruits to a temperature of 0 C;
- ii) under-cooling fruits from 0 C to a temperature between -6 C and -15 C that is at least 5 C below the freezing point of the fruit, at a rate of between 2 C per hour and 320 C per hour

iii) reducing the temperature further until ice formation occurs to produce fruits in a frozen state.

As seen above, the only working example presented by Applicant as “examples 4 to 6” on page 7 of the specification, does not provide three separate steps of “cooling fruits to a temperature of 0 C”, and then “under-cooling fruits from 0 C to a temperature between -6 C and -15 C ... at a rate of between 2 C per hour and 320 C per hour”, and further “reducing the temperature further until ice formation occurs to produce fruits in a frozen state”. The example discloses reduction of temperature from +10 to -30°C over the time period of 16 hours

Therefore, Applicants have not provided sufficient guidance toward the nature of cooling rate as an instantaneous rate of change of the temperature.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-5, 13-14 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rendered indefinite for the recitation of the phrase “frozen fruits which when eaten frozen better retain the flavor and structure of unfrozen fruit”. The claim is rendered indefinite for the following reasons:

-it is not clear how frozen fruit have a better flavor and structure than fresh fruit,

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-it is not clear if frozen fruit produced by the recited method retain the flavor and structure that are rated higher when compared to some other product, or

-there is some other interpretation.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 4-5, 13-14 and 16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,169,426 in view of Yamane et al (EP 0,815,746 A1). It would have been obvious to one of ordinary skill in the art to apply the freezing process of vegetables to fruit as disclosed in Yamane.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 4-5, 13-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al (EP 0,815,746 A1) in view of Desrosier et al (FUNDAMANTALS OF FOOD FREEZING) for the reasons of record as stated in the Office action mailed November 27, 2007 with Jay, Francis et al and OTHER DIFFERENTIAL EQUATIONS cited as evidence as discussed in the Office action mailed November 27, 2007.

As sated in the previous Office action, Yamane et al disclose the method of manufacturing fruit by cooling fruit below the freezing point (p. 3 lines 30-34). Yamane et al disclose rapidly cooling fruit from room temperature to a temperature that is close to a freezing point (0°C), and then slower cooling to a temperature that is below freezing point (p. 3 lines 44-48). Yamane et al also disclose that the slow cooling can be combined with a rapid freezing treatment, in which the food is frozen at -18°C or lower, for example, from supercooled state below the freezing point (p. 9 lines 1-7). Yamane et al also disclose freezing points and regions below the freezing point from -1°C to -18°C (pp. 6-7; p. 9 lines 1-7). Thus Yamane et al discloses a process for production of frozen fruits comprising the steps of cooling fruits to 0°C (temperature that is close to a freezing point), under-cooling fruits from 0°C to a temperature up to -18°C, and then reducing the temperature further to produce the fruit in a frozen state. Yamane et al disclose a slow cooling rate range of 0.01-0.5°C/hour (Abstract). Yamane et al also

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disclose freezing points of fruits from -0.9°C to -2.4°C and regions below the freezing point from -1°C to -18°C (pp. 6-7; p. 9 lines 1-7). Yamane et al disclose the following fruits: persimmon, apple, lemon, cherry, asian pear, strawberry, fig, peach, blueberry, apricot (p. 6). Yamane et al also discloses that "in the present invention, any method may be employed to subject the food or the like to a cooling treatment in a temperature zone in the non-freezing region below the freezing point as long as a relatively rapid cooling treatment can be carried out in a low-temperature region below 0°C , and as long as a slow cooling treatment to below the freezing point at 0.01 to 0.5. C/hour ... can be carried out, and no particular restrictions are imposed on this method (p. 4 lines 54-58). Regarding the temperature difference between the surface and the core, Yamane et al disclose that "Furthermore, in the present invention, it is possible to preserve a perishable food or the like, especially one composed of an animal or vegetable material, with only the inner cells thereof in a non-frozen state. The above-mentioned slow cooling treatment, which is carried out at a gradual cooling rate of 0.01 to 0.5 $^{\circ}\text{C}/\text{hour}$, can be combined with a rapid freezing treatment, in which the food or the like is frozen at -18°C or lower, for example, from a supercooled state below the freezing point, which makes it easier for the extracellular fluid to freeze, while making it more difficult for the intracellular fluid to freeze, so that it is possible to freeze the outer cells of the food or the like and to preserve the inner cells in a non-frozen state. When a method such as this is employed in the present invention, it is possible to maintain a perishable food, especially fruit, an animal product, seafood, or the like, at a high level of freshness and quality" (p. 9 lines 1-8).

Yamane et al do not disclose the recited cooling range, temperature difference between the core and the surface of fruit, and a particular fracture force.

Desrosier et al disclose that “great advances have been made in the techniques for freezing fruit rapidly. The present individually quick-frozen (IQF) and cryogenic frozen fruits are superior in quality and stand up better upon thawing than the fruits frozen slowly in packages, cartons or bulk containers” (p. 48). As evidenced by Jay (MODERN FOOD MICROBIOLOGY) “quick or fast freezing is the process by which the temperature of foods is lowered to about -20°C within 30 minutes”, and “slow freezing refers to the process whereby the desired temperature is achieved within 3-72 hours” (p.325).

OTHER DIFFERENTIAL EQUATIONS is relied upon as evidence of calculating and defining the cooling rate.

Since Yamane et al also discloses the combination of rapid cooling with slow cooling and that any method may be employed to subject the food or the like to a cooling treatment in a temperature zone in the non-freezing region below the freezing point, and Desrosier et al discloses advantages of quick cooling/freezing techniques, it would have been obvious to modify disclosure of Yamane et al and to vary cooling rates in order to achieve high level of freshness and quality as disclosed by Yamane et al. One of ordinary skill in the art would have been motivated to do so in order to obtain a superior quality product as taught by Desrosier et al. It is noted that such cooling rate is in the claimed range as evidenced by Jay. As evidenced by Francis et al (Wiley Encyclopedia of Food Science and Technology) “[t]he freezing rate may be evaluated

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by the speed of movement of the ice (in centimeters per hour) through a product. This speed is faster near the surface and slower toward the center" (p. 1117). Thus, employing the method steps as taught by Yamane et al and cooling rate as taught by Desrosier et al. for the reasons stated above, would inherently lead to a temperature difference between the surface and core and fracture force as a measurement of mechanical properties of food in relation to texture as claimed.

Claims 1, 4-5, 13-14 and 16 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al (EP 0,815,746 A1) hereinafter Yamane'746 in view of Yamane (JP 05-161449) hereinafter Yamane'449.

Yamane'746 discloses a process for the production of frozen fruits which makes possible to maintain fruit in their high state of freshness (page 3 lines 9-12), said fruits characterized by a surface and a core, said process comprising the steps of

- i) cooling fruits to a temperature of 0 °C,
- ii) under-cooling fruits from 0 °C to a temperature between -2.2 C and -15 C that is at least 5 C below the freezing point of the fruit,
- iii) reducing the temperature further until ice formation occurs to produce fruits in a frozen state (page 13 Example 10).

Further in this regard, Yamane et al also disclose that the slow cooling can be combined with a rapid freezing treatment, in which the food is frozen at -18°C or lower, for example, from supercooled state below the freezing point (p. 9 lines 1-7). Yamane et al also disclose freezing points and regions below the freezing point from -1°C to -18°C (pp. 6-7; p. 9 lines 1-7). Thus Yamane et al discloses a process for production of frozen

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fruits comprising the steps of cooling fruits to 0°C (temperature that is close to a freezing point), under-cooling fruits from 0°C to a temperature up to -18°C, and then reducing the temperature further to produce the fruit in a frozen state. Yamane et al also disclose freezing points of fruits from -0.9°C to -2.4°C and regions below the freezing point from -1°C to -18°C (pp. 6-7; p. 9 lines 1-7).

In regard to claim 1, Yamane'746 does not disclose the cooling rate during the under-cooling as recited.

Yamane'449 discloses a method of cooling fruit below its freezing point to preserve the freshness of the fruit for a long period of time (Abstract). Yamane'449 discloses

i) cooling fruits to a temperature of 0 °C (which is 1 to 2°C higher than the freezing point),

ii) under-cooling fruits from 0 °C to a temperature below the freezing point at a rate of 5°C/per hour to 0.5 C/per 24 hours (Abstract).

Yamane'449 discloses that the cooling fruit at a disclosed cooling rate slows down the metabolic processes in fruit and permits maintenance of the freshness of the cooled fruit.

Since both Yamane'746 and Yamane'449 are concerned with preserving fruit at their fresh state by cooling fruits to a temperature of 0 °C and then under-cooling fruits from 0 °C to a temperature below the freezing point, and Yamane'449 teaches cooling fruit at a disclosed cooling rate to slow down the metabolic processes in fruit and to therefore maintain the freshness of the cooled fruit, one of ordinary skill in the art would

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have been motivated to modify Yamane'746, and to employ the cooling rate as disclosed by Yamane'449 for the benefits taught by Yamane'449.

In regard to claim 1, Yamane'746 is silent as to the temperature difference between the core and the surface of the fruit. In regard to claim 16, Yamane'746 is silent as to the fracture force of the fruit in the frozen state.

Regarding the temperature difference between the core and the surface of the fruit and the fracture force of the fruit in the frozen state, it is noted that although the references do not specifically disclose every possible quantification or characteristic of its product, such as the temperature difference between the core and the surface of the fruit and fracture force of the fruit in the frozen state, these characteristics would have been expected to be in the claimed range absent any clear and convincing evidence and/or arguments to the contrary. The combination of references disclose the same starting materials and methods as instantly (both broadly and more specifically) claimed, and thus one of ordinary skill in the art would recognize that the temperature difference between the core and the surface of the fruit and fracture force of the fruit in the frozen state, among many other characteristics of the product obtained by referenced method, would have been an inherent result of the process disclosed therein. The Patent Office does not possess the facilities to make and test the referenced method and product obtain by such method, and as reasonable reading of the teachings of the references has been applied to establish the case of obviousness, the burden thus shifts to applicant to demonstrate otherwise.

In regard to claims 4 and 5, Yamane'449 et al discloses the following fruits: persimmon, apple, lemon, cherry, asian pear, strawberry, fig, peach, blueberry, and apricot (p. 6).

In regard to claims 13 and 14, Yamane'449 is silent as to the recited cooling rate. As evidenced by both Yamane'746 and Yamane'449 very wide cooling ranges may be applied to fruit during under cooling to produce fruit in their fresh state. Thus, one of ordinary skill in the art would have been motivated to modify Yamane'746 in view of Yamane'449, and to further expand the range of the cooling rate in order to decrease processing time, and to therefore decrease the cost of the final product.

Response to Arguments

Applicants' arguments filed May 8, 2008 have been fully considered but they are not persuasive.

In response to applicants' argument regarding cooling rate and the "slow" or "gradual" cooling on pages 7-15 of the Reply to the Office action mailed November 27, 2007, applicants are referred to the rejection of claims 1, 4-5, 13-14 and 16 under 35 U.S.C. 112, first paragraph, as stated above.

In response to applicants' argument on page 8 of the Reply that "[i]n contrast, applicants' claims are directed to a different technical problem of the production of frozen fruits which when eaten frozen better retain the flavor and structure of unfrozen fruit", applicants are referred to the rejection of claims 1, 4-5, 13-14 and 16 under 35 U.S.C. 112, second paragraph, as stated above.

On page 11, applicants state that:

Applicants' claims recite a cooling "rate" and not an "overall" or "average" cooling rate. The term cooling rate, as it is commonly employed, refers to the slope of the temperature Vs time cooling curve, i.e., the rate of change of the temperature with time measured at each time point. Cooling rate is an instantaneous rate of change of temperature with time just as speed is the instantaneous rate of change of velocity with time. The Examiners "reinterpretation" of Yamane would be analogous to explaining to a traffic patrolman that the car was not traveling 85 miles an hour in a 50 mile per hour zone because over the last hour the car only traveled 40 miles. Applicants cooling rate is analogous to the "speed of the car" and not to how long it took to drive a given number of miles.

In response to this argument, applicants are referred to the rejection of claims 1, 4-5, 13-14 and 16 under 35 U.S.C. 112, first paragraph, as stated above.

On page 13 of the Reply, Applicants state that "neither do the references disclose under-cooling to any specific temperature let alone under, cooling to a temperature at least 5 C below the freezing point of the fruit (in the range from 0 C to -6 C to -15 C). Examiner respectfully disagrees. Yamane et al also disclose freezing points of fruits from -0.9°C to -2.4°C and regions below the freezing point from -1°C to -18°C (pp. 6-7; p. 9 lines 1-7; page 13 Example 10).

In response to the applicants' arguments regarding comparative examples (pages 13-15 of the reply), applicants are referred to the rejection of claims 1, 4-5, 13-14 and 16 under 35 U.S.C. 112, first paragraph, as stated above. As stated above, it is further noted that the only working example presented by Applicant as "examples 4 to 6" on page 7 of the specification discloses the following:

The fruits were cut into 1cm cubes and were frozen from +10 C to -30 C in a Montford freezer at a rate of 2.5 C per hour over 16 hours. During this

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process, mango was undercooled to -9.8C, kiwi was undercooled to -9.3C, and strawberries were undercooled to -7.4C. The samples were then stored in a freezer at -18 C and mechanical characteristics were measured.

It appears that applicant in fact discloses freezing rate (2.5°C per hour) which is defined as a difference between the initial (+10°C) and the final temperature (-30°C) divided by the freezing time (16 hours). It is further noted that claim 1 recites:

- i) cooling fruits to a temperature of 0 C;
- ii) under-cooling fruits from 0 C to a temperature between -6 C and -15 C that is at least 5 C below the freezing point of the fruit, at a rate of between 2 C per hour and 320 C per hour
- iii) reducing the temperature further until ice formation occurs to produce fruits in a frozen state.

As seen above, the only working example presented by Applicant as “examples 4 to 6” on page 7 of the specification, does not provide three separate steps of “cooling fruits to a temperature of 0 C”, and then “under-cooling fruits from 0 C to a temperature between -6 C and -15 C ... at a rate of between 2 C per hour and 320 C per hour”, and further “reducing the temperature further until ice formation occurs to produce fruits in a frozen state”. The example discloses reduction of temperature from +10 to -30°C over the time period of 16 hours. The comparative examples 1-3, are directed to the process of freezing fruit in a blast freezer from ambient temperature to -30C within 1 hour, which has nothing to do with the process disclosed by Yamane. Therefore,

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Applicants' arguments regarding demonstration of surprising effects by the comparative examples are not being deemed persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VERA STULII whose telephone number is (571)272-3221. The examiner can normally be reached on 7:00 am-3:30 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JENNIFER MCNEIL can be reached on (571)272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steve Weinstein/
Primary Examiner, Art Unit 1794

/Vera Stulii/
Examiner, Art Unit 1794